**Characteristics of Protists:**

* Protists can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Protists live in \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_ surroundings.
* Protists are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Protists reproduce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Protists can be classified by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shared with other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or how they obtain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| Protist Type | Animal-like | Plant-like | Fungus-like |
| Can it move? |  |  |  |
| How many cells? |  |  |  |
| How does it obtain energy? |  |  |  |
| Examples |  |  |  |
| Nicknames |  |  |  |
| Interesting Facts |  |  |  |

Protozoan Pictures with Labels:

**Characteristics of Fungi:**

* Fungi grow best in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ areas.
* Most are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but yeast is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Fungi have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and thick \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Fungi are similar to plants, but lack specialized \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Fungi can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Label the mushroom:

**Hyphae** = chains of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ similar to plant \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reproduction:

* Fungi reproduce with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which can be produced \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* A spore is a waterproof \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cell that can grow into a new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ released into the \_\_\_\_\_\_\_\_\_\_\_ and spread by the \_\_\_\_\_\_\_\_\_.
* Yeasts reproduce asexually through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = new \_\_\_\_\_\_\_\_\_\_ grows out of a body on the \_\_\_\_\_\_\_\_\_\_\_\_\_ (much like a bud on a tree)

Fungi are classified into \_\_\_\_\_\_\_\_ groups based on its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and how it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Fungal Importance:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -- penicillin

3. Cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -- athlete’s foot, corn smut, wheat rust, Dutch elm

4. Lichen – fungus + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* **Pioneer species** – 1st \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to appear after weather disruption
* Indicator of \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Characteristics of Protists:**

* Protists can be unicellular or mutlicellular.
* Protists live in moist or wet surroundings.
* Protists are eukaryotes.
* Protists reproduce asexually and sexually.

Protists can be classified by characteristics shared with other kingdoms or how they obtain energy.

|  |  |  |  |
| --- | --- | --- | --- |
| Protist Type | Animal-like | Plant-like | Fungus-like |
| Can it move? | **Yes** | **Yes and no;**  **Depends** | **At some point in their life** |
| How many cells? | **Unicellular** | **Unicellular and multicellular** | **Unicellular and mutlicellular** |
| How does it obtain energy? | **Consumers** | **Producers** | **Decomposers** |
| Examples | **Pseudopod**  **Cilia**  **Flagella**  **Parasite** | **Diatoms**  **Dinoflagellates**  **Euglenoids**  **Algae (red, brown, green)** | **Slime molds, water molds, downy mildew** |
| Nicknames | **Protozoans** | **Algae** |  |
| Interesting Facts | **Special movement capabilities** | **Green algae close to plant characteristics; Red and brown algae are used in foods.** | **Have cell walls and reproduce with spores** |

Protozoan Pictures with Labels:

**Characteristics of Fungi:**

* Fungi grow best in moist and warm areas.
* Most are multicellular, but yeast is unicellular.
* Fungi have **nuclei** and thick **cell walls** made of **chitin**.
* Fungi are similar to plants, but lack specialized **tissues** and **organs** such as **leaves** and **roots**.
* Fungi can be **consumers**, but most are **decomposers**.

Label the mushroom:

**Hyphae** = chains of cells similar to plant roots

Reproduction:

* Fungi reproduce with **spores**, which can be produced **asexually** or **sexually**.
* A spore is a waterproof **reproductive** cell that can grow into a new **organism** released into the **air** and spread by the **wind**.
* Yeasts reproduce asexually through **budding** = new **cell** grows out of a body on the **parent** (much like a bud on a tree)

Fungi are classified into 4 groups based on its shape and how it reproduces.

Fungal Importance:

1. Decomposers

2. Antibiotics/medicine -- penicillin

3. Food/baking

4. Cause disease -- athlete’s foot, corn smut, wheat rust, Dutch elm

5. Lichen – fungus + algae or bacteria

* **Pioneer species** – 1st organism to appear after weather disruption
* Indicator of air pollution